# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
HPR, Schedule 1

**Revision date** 12-Mar-2024 **Revision Number** 1

## 1. Identification

**Product identifier**

**Product Name** Copper AA Standard: 1000 µg/mL Cu in 5% HNO3 [100ml bottle]

**Other means of identification**

**Product Code(s)** 5190-8279

**Recommended use of the chemical and restrictions on use**

**Recommended use** Reagents and Standards for Analytical Chemical Laboratory Use

**Restrictions on use** No information available

**Details of the supplier of the safety data sheet**

**Initial supplier identifier**

Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA

800-227-9770

**E-mail** pdl-msds_author@agilent.com

**Emergency telephone number**

**Emergency Telephone**
CHEMTREC®: 1-800-424-9300

## 2. Hazard identification

**Classification**
Classification according to WHIMIS

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Chronic aquatic toxicity | Category 2 |
| Corrosive to metals | Category 1 |

**Label elements**

**Danger**

**Hazard statements**

Classification according to WHIMIS
Causes skin irritation
Causes serious eye damage
Toxic to aquatic life with long lasting effects
May be corrosive to metals



**Precautionary Statements - Prevention**
Wash face, hands and any exposed skin thoroughly after handling
Avoid release to the environment
Keep only in original packaging
Wear protective gloves, protective clothing, eye protection and face protection

**Precautionary Statements - Response**

**Eyes**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTRE or doctor
**Skin**
IF ON SKIN: Wash with plenty of water and soap
If skin irritation occurs: Get medical advice and attention
Take off all contaminated clothing and wash it before reuse
**Spill**
Collect spillage
Absorb spillage to prevent material damage

**Precautionary Statements - Storage**
Store in corrosion resistant container with a resistant inner liner

**Precautionary Statements - Disposal**
Dispose of contents and container to an approved waste disposal plant

**Other information**
Toxic to aquatic life.

## 3. Composition/information on ingredients

**Substance**

Not applicable.

**Mixture**

**Chemical nature** aqueous solution.

| Chemical name | CAS No. | Weight-% | Hazardous Material Information Review Act registry number (HMIRA registry #) | Date HMIRA filed and date exemption granted (if applicable) |
|---|---|---|---|---|
| Nitric Acid | 7697-37-2 | 0 - 10% | - | |
| Copper | 7440-50-8 | 0 - 10% | - | |

**Additional information**
The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.

## 4. First-aid measures

**Description of first aid measures**

**General advice** Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Inhalation** Remove to fresh air. Get medical attention immediately if symptoms occur.

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical attention.

**Skin contact** Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

**Ingestion** Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.

**Self-protection of the first aider** Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Burning sensation.

**Indication of any immediate medical attention and special treatment needed**

**Note to doctors** Treat symptomatically.

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Large Fire** CAUTION: Use of water spray when fighting fire may be inefficient.

**Unsuitable extinguishing media** Do not scatter spilled material with high pressure water streams.

**Specific hazards arising from the chemical** No information available.

**Explosion data**

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.

**Other information** Refer to protective measures listed in Sections 7 and 8.

**Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labelled containers.

## 7. Handling and storage

**Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with

skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Please refer to the manufacturer's certificate for specific storage and transport temperature conditions. Store only in the original receptacle unless other advice is given on the CoA. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

## 8. Exposure controls/personal protection

**Control parameters**

**Exposure Limits**

| Chemical name | Alberta | British Columbia | Ontario | Quebec |
|---|---|---|---|---|
| Nitric Acid<br>7697-37-2 | TWA: 2 ppm<br>TWA: 5.2 mg/m³<br>STEL: 4 ppm<br>STEL: 10 mg/m³ | TWA: 2 ppm<br>STEL: 4 ppm | TWA: 2 ppm<br>STEL: 4 ppm | TWA: 2 ppm<br>TWA: 5.2 mg/m³<br>STEL: 4 ppm<br>STEL: 10 mg/m³ |
| Copper<br>7440-50-8 | TWA: 0.2 mg/m³<br>TWA: 1 mg/m³ | TWA: 1 mg/m³<br>TWA: 0.2 mg/m³ | TWA: 0.2 mg/m³<br>TWA: 1 mg/m³ | TWA: 0.2 mg/m³<br>TWA: 1 mg/m³ |

**Appropriate engineering controls**

**Engineering controls** Showers
Eyewash stations
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Avoid contact with eyes. Wear safety glasses with side shields (or goggles). Tight sealing safety goggles.

**Hand protection** Wear protective Neoprene™ gloves. The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374. Wear suitable gloves. Impervious gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Environmental exposure controls** Do not allow into any sewer, on the ground or into any body of water.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended.

## 9. Physical and chemical properties

**Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Liquid |
| **Colour** | colourless |
| **Odour** | Odourless |
| **Odour threshold** | No information available |

| **Property** | **Values** | **Remarks • Method** |
|---|---|---|
| **pH** | No data available | None known |
| **Melting point / freezing point** | No data available | None known |
| **Initial boiling point and boiling range** | No data available | None known |
| **Flash point** | No data available | None known |
| **Evaporation rate** | No data available | None known |
| **Flammability** | No data available | None known |
| **Flammability Limit in Air** | | None known |
| **Upper flammability or explosive limits** | No data available | |
| **Lower flammability or explosive limits** | No data available | |
| **Vapour pressure** | No data available | None known |
| **Relative vapour density** | No data available | None known |
| **Relative density** | No data available | None known |
| **Water solubility** | No data available | None known |
| **Solubility in other solvents** | No data available | None known |
| **Partition coefficient** | No data available | None known |
| **Autoignition temperature** | No data available | None known |
| **Decomposition temperature** | | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |

**Other information**

| | |
|---|---|
| **Explosive properties** | No information available. |
| **Oxidising properties** | No information available. |
| **Softening point** | No information available |
| **Molecular weight** | No information available |
| **VOC content** | No information available |
| **Liquid Density** | No information available |
| **Bulk density** | No information available |

## 10. Stability and reactivity

**Reactivity**

No information available.
**Chemical stability**

Stable under normal conditions.
**Possibility of hazardous reactions**

None under normal processing.
**Conditions to avoid**

Exposure to air or moisture over prolonged periods.
**Incompatible materials**

Oxidising agent. Strong acids. Strong bases.
**Hazardous decomposition products** None known based on information supplied.

## 11. Toxicological information

**Information on likely routes of exposure**

**Product Information**

| | |
|---|---|
| **Inhalation** | Specific test data for the substance or mixture is not available. |
| **Eye contact** | Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes. |
| **Skin contact** | Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). |
| **Ingestion** | Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. |

**Symptoms related to the physical, chemical and toxicological characteristics**

| | |
|---|---|
| **Symptoms** | Redness. Burning. May cause blindness. May cause redness and tearing of the eyes. |

**Acute toxicity**

**Numerical measures of toxicity**

**The following values are calculated based on chapter 3.1 of the GHS document**

| | | |
|---|---|---|
| **ATEmix (oral)** | 99,999.00 | mg/kg |
| **ATEmix (dermal)** | 99,999.00 | mg/kg |
| **ATEmix (inhalation-gas)** | 99,999.00 | ppm |
| **ATEmix (inhalation-dust/mist)** | 99,999.00 | mg/l |

**ATEmix (inhalation-vapour)** 58.90 mg/l

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Nitric Acid<br>7697-37-2 | - | - | = 2500 ppm ( Rat ) 1 h<br>ATE (vapours) = 2.65 mg/L |
| Copper<br>7440-50-8 | - | - | > 5.11 mg/L ( Rat ) 4 h |

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes skin irritation.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes burns. Causes serious eye damage.

**Respiratory or skin sensitisation** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** No information available.

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Target organ effects** Respiratory system, Eyes, Skin, Teeth.

**Aspiration hazard** No information available.

## 12. Ecological information

**Ecotoxicity** Toxic to aquatic life with long lasting effects.

| Chemical name | Algae/aquatic plants | Fish | Toxicity to | Crustacea |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| | | | microorganisms | |
| Copper<br>7440-50-8 | EC50: 0.031 - 0.054mg/L (96h, Pseudokirchneriella subcapitata)<br>EC50: 0.0426 - 0.0535mg/L (72h, Pseudokirchneriella subcapitata) | LC50: 0.0068 - 0.0156mg/L (96h, Pimephales promelas)<br>LC50: <0.3mg/L (96h, Pimephales promelas)<br>LC50: =0.2mg/L (96h, Pimephales promelas)<br>LC50: =0.052mg/L (96h, Oncorhynchus mykiss)<br>LC50: =1.25mg/L (96h, Lepomis macrochirus)<br>LC50: =0.3mg/L (96h, Cyprinus carpio)<br>LC50: =0.8mg/L (96h, Cyprinus carpio)<br>LC50: =0.112mg/L (96h, Poecilia reticulata) | - | EC50: =0.03mg/L (48h, Daphnia magna) |

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

**Component Information**

| Chemical name | Partition coefficient |
|---|---|
| Nitric Acid<br>7697-37-2 | -2.3 |

**Other adverse effects** No information available.

## 13. Disposal considerations

**Disposal methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

## 14. Transport information

**TDG**

| | |
|---|---|
| **UN number or ID number** | UN3264 |
| **UN proper shipping name** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid) |
| **Transport hazard class(es)** | 8 |
| **Packing group** | III |
| **Special Provisions** | 16 |
| **Marine pollutant** | P. |
| **Description** | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III |

**DOT**

| | |
|---|---|
| **UN number or ID number** | UN3264 |
| **Extended proper shipping name** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid) |
| **Transport hazard class(es)** | 8 |
| **Packing group** | III |
| **Reportable Quantity (RQ)** | (Nitric Acid: RQ (kg)= 454.00) Nitric Acid: RQ (lb)= 1000.00 |
| **Reportable quantity (kg) (calculated)** | Nitric Acid: RQ (kg)= 10089.00 |
| **Reportable quantity (lbs) (calculated)** | Nitric Acid: RQ (lb)= 22222.00 |
| **DOT Marine Pollutant** | I. |
| **Marine pollutant** | Copper |
| **Description** | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III |
| **Special Provisions** | IB3, T7, TP1, TP28 |
| **Emergency Response Guide Number** | 154 |

**MEX**

| | |
|---|---|
| **UN number or ID number** | UN3264 |
| **UN proper shipping name** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid) |
| **Transport hazard class(es)** | 8 |
| **Packing group** | III |
| **Description** | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III |
| **Special Provisions** | 223, 274 |

**IATA**

| | |
|---|---|
| **UN number** | UN3264 |
| **UN proper shipping name** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid) |
| **Transport hazard class(es)** | 8 |
| **Packing group** | III |
| **ERG Code** | 8L |
| **Special Provisions** | A3, A803 |
| **Description** | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III |

| | |
|---|---|
| **UN number** | UN3264 |
| **UN proper shipping name** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid) |
| **Transport hazard class(es)** | 8 |
| **Packing group** | III |
| **EmS-No.** | F-A, S-B |
| **Special Provisions** | 223, 274 |
| **Marine pollutant** | P |

| | |
|---|---|
| **Description** | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III, Marine pollutant |

## 15. Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**International Regulations**

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

**International Inventories**

| | |
|---|---|
| **TSCA** | Complies. |
| **DSL/NDSL** | Contact supplier for inventory compliance status. |
| **EINECS/ELINCS** | Contact supplier for inventory compliance status. |
| **ENCS** | Contact supplier for inventory compliance status. |
| **IECSC** | Contact supplier for inventory compliance status. |
| **KECL** | Contact supplier for inventory compliance status. |
| **PICCS** | Contact supplier for inventory compliance status. |
| **AIIC** | Contact supplier for inventory compliance status. |

**Legend:**
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
**ENCS** - Japan Existing and New Chemical Substances
**IECSC** - China Inventory of Existing Chemical Substances
**KECL** - Korean Existing and Evaluated Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**AICS** - Australian Inventory of Chemical Substances

## 16. Other information

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **NFPA** | **Health hazards** 3 | **Flammability** 0 | **Instability** 0 | **Special hazards** - |
| **HMIS** | **Health hazards** 3 | **Flammability** 0 | **Physical hazards** 0 | **Personal protection** X |

**Key or legend to abbreviations and acronyms used in the safety data sheet**

**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

| | | | |
|---|---|---|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value | Sk* | Skin designation |

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

**Revision date** 12-Mar-2024

**Revision Note** No information available.

**Disclaimer**

**The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.**

**End of Safety Data Sheet**